DOCUMENT RESUME

ED 344 552 HE 025 467

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TITLE	Pilot Project: Regional Course Sharing through Technology.
INSTITUTION	American Association of State Colleges and Universities, Washington, D.C.; Chadron State Coll., Nebr.
PUB DATE	1 Jul 89
NOTE	8p.; This report is one of a group gathered by the AASCU/ERIC Model Programs Inventory Project, funded by the Fund for the Improvement of Postsecondary Education to the American Association of State Colleges and Universities, in collaboration with the ERIC Clearinghouse on Higher Education.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Computer Assisted Instruction; *Distance Education; Elementary Secondary Education; Higher Education; Models; Program Descriptions; Program Evaluation; *Rural Education; State Colleges
IDENTIFIERS	*AASCU ERIC Model Programs Inventory Project; *Chadron State College NE

ABSTRACT

This project proposal describes a pilot project, "Regional Course Sharing Through Technology," at Chadron State College, Nebraska, which utilizes telecommunications to enable small, rural schools to share teaching staff among several schools. Away from the highly populated urban areas of Nebraska, most school districts are widely scattered and serve small communities under economic strain in recent decades. Recently upgraded educational accreditation standards have put an additional stress on these schools. The project will use electronic linkups which enable schools to share instructors and students to communicate with one another and to have access to resources beyond their schools. The technology involves ordinary dial-up telephone lines along with other off-the-shelf hardware and software to deliver two-way audio, compressed video, and hard copy material. Extensive inservice opportunities for teachers are also part of the project. Evaluation will plot changes in student and teacher attitudes toward computer enhanced course delivery, measure achievements of students using this system and compare total costs and per student costs of the system with the costs of the traditional classroom system. (JB)

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PILOT PROJECT:
REGIONAL COURSE SHARING
THROUGH TECHNOLOGY

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Funded Through
Chapter 2 Federal Funds
Nebraska Telephone Association
Local School District Funds

Project Start
July 1, 1989

HE 025 467

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AASCU/ERIC Model Programs Inventory Project

The AASCU/ERIC Model Programs Inventory is a two-year project seeking to establish and test a model system for collecting and disseminating information on model programs at AASCU-member institutions--375 of the public four-year colleges and universities in the United States.

The four objectives of the project are:

- To increase the information on model programs available to all institutions through the ERIC system
- To encourage the use of the ERIC system by AASCU institutions
- To improve AASCU's ability to know about, and share information on, activities at member institutions, and
- To test a model for collaboration with ERIC that other national organizations might adopt.

The AASCU/ERIC Model Programs Inventory Project is funded with a grant from the Fund for the Improvement of Postsecondary Education to the American Association of State Colleges and Universities, in collaboration with the ERIC Clearinghouse on Higher Education at The George Washington University.

ABSTRACT

Nebraska's population of about 1.7 million is mostly concentrated along interstate 80 from Grand Island to Omaha. The remainder of the population is scattered among small agricultural units, small towns, and a few small cities. Almost two thirds of the State is composed of a sandhills and high plains region supporting ranches and farms. The service region of Chadron State College exceeds 14,000 square miles and is larger than the combined area of Delaware, Connecticut, New Hampshire, and 4/5 of New Jersey.

Nebraska has over 700 school districts most of them being rural K-8 units and small K-12 town schools. Cherry County in North Central Nebraska has the most rural one room schools in the nation. Rural students are tuitioned into the town schools after the eighth grade. Consolidation is not a popular issue and, given the geography and distances, is not always a practical option. Because State support formulas are not a large part of school funding, per pupil support varies widely among school districts. In addition, a weakened agricultural base over the last several years has strained school budgeting in many parts of the State. The rules governing accreditation of schools have also been upgraded placing an added burden on small schools. Currently schools are allowed some deviations from the rules, for instance, they are allowed a certain number of courses taught by noncertified teachers. Within three years this will not be permitted.

Given this school climate, many schools, especially small high schools, are faced with adding staff or losing accreditation. One means of dealing with the problem is to use technology to share staff among several schools. A Pilot Project: Regional Course Sharing Through Technology was developed and supported by Governor Orr, Nebraska Department of Education, Nebraska Telephone Association, Chadron State College, and five public schools. The State Legislature appropriated $300,000 of Federal Chapter 2 funds over a two-year period, and the agencies involved formed a partnership to supplement this amount with additional funds necessary to complete the Pilot Project.

The technology used in the Project involves ordinary dial-up telephone lines along with other off-the-shelf hardware and software to deliver two-way audio, compressed video, and hard copy material. Extensive inservice opportunities for teachers is included in the project.

INTRODUCTION

The paper describes a technological solution to a rural education problem. Called the Pilot Project: Regional Course Sharing Through Technology, the project addresses the problem of isolation of small schools scattered in a wide geographic area.

The paper also describes the rural isolation problem, some of the funding difficulties in a rural environment, and changes in the rules governing state accreditation of schools as well as the history and structure of the Project.

BACKGROUND

Nebraska's population of approximately 1.7 million is concentrated in a hook shaped area from Grand Island to Omaha. This area includes the largest cities--Grand Island, Lincoln (the capital), and Omaha (the largest). Outside these major cities, the population is widely scattered among isolated agricultural units and small towns. Approxiately two thirds of the state is composed of a sandhills, highplains region with an almost totally rural population.

Nebraska has over 700 school districts. In most areas the districts comprise rural K-8 units and small K-12 town schools where rural students are tuitioned after the eighth grade. Consolidation is not a popular issue among the voters in the State and, given the geography and distances, is not always a practical option. Per pupil support varies widely among school districts because State support formulas are not a large part of school funding. A large portion of school support is based on local taxes, much of this in the form of property tax. A weakened agricultural base for the last several years has strained school budgeting in many parts of the state.

New rules upgrading accreditation have also placed a strain on schools. In the past, schools were allowed a certain number of deviations from the rules; for instance, they could have some courses taught by uncertified teachers. Within three years this will not be permitted. Many small schools are faced with hiring additional staff to provide a basic curriculum and a reasonable number of electives. Sharing teachers is possible in some cases, but the distances between many schools does not make this an efficient option nor one teachers want to be part of; they would spend more time driving than teaching.

One means of dealing with the problem is to use technology to share staff among several schools. Consequently, a Pilot Project: Regional Course Sharing Through Technology was developed and supported by Governor Orr, Nebraska Department of Education, Nebraska Telephone Association, Chadron State College, and five public schools. The State Legislature appropriated $300,000 of Federal Chapter 2 funds over a two-year period , and the agencies involved agreed to supplement this amount with the additional funds

necessary to complete the Pilot Project.

DESCRIPTION

The purpose of the Project is to demonstrate the efficiency and effectiveness of regional networking in sharing instructional resources. The main product of the Project will be a set of guidelines: economic, hardware, software and human interaction which can be used by any educational or other organization which might benefit from the regional networking concept.

Benefits are to include the following:

Students who may be geographically isolated, will be provided equal access to all types of courses.

Students, teachers and school districts will have access to advanced high school courses that have been previously unavailable such as advanced placement courses and courses designed to meet college entrance requirements and special programs such as teen-age stress management, identifying and helping at-risk students.

Students will receive instruction from highly qualified teachers.

Students will be able to talk to and exchange information with other Nebraska students.

Students will have access to banks of information that may not be available in their school libraries.

Teachers will have access to college courses for continuing education and for in-service training in their own locale, rather than having to travel long distances to college campuses.

Teachers will be able to electronically store significant materials and save them for later use.

Teachers will have access to new, up-to-date curriculum resources such as video disks and national data bases that will enrich their courses.

Teachers will be able to exchange lesson plans and teaching ideas.

School districts will be able to maintain local control of educational offerings by creating their own courses or by increased cooperation with other school districts.

School districts may save their accreditation by sharing instructors and other resources with other school districts.

Local businesses, teachers, and students will learn from others through resource sharing.

Individuals may benefit through access to national data bases for personal and professional growth.

Quality teachers may be recruited and retained because of expanded resources and opportunities.

Students and families will be less likely to leave small communities to find schools with better resources.

To provide quality instruction, the communication system must include the following:

Multi-site, two way audio with excellent volume and clarity. The normal conference call equipment is not satisfactory.

Ability to send and receive hardcopy text as well as color pictures and graphics.

Ability to command the display of stored graphics and other instructional materials from hard disk, videotape and/or videodisc so that the same display or video sequence is seen at all sites simultaneously.

Ability of any site to point, draw, and paint on the viewing screen at that site and at all other sites simultaneously.

A large viewing screen or monitor which can support high resolution graphics and video at each site.

Ability to send compressed video images from any site to all other sites simultaneously.

Quality hardware at class production sites to digitize text and all types of pictorial sources, including slides and video, for storage on hard disk and use with compressed video.

Sufficient computer RAM and storage at class production sites to produce and store text, sound, and visuals.

Sophisticated authoring software at class production sites to manage the class sequences in the real time mode and to prepare tutorials for students for review and practice settings outside of class.

Sufficient computer RAM at all sites.

A removable tape, disk, or other storage medium at all sites to exchange large amounts of data by mail to save telephone line time.

The highest speed modem capability at all sites that regional telephone systems can support.

This system would eventually have the flexibility to accommodate several classes taught simultaneously. If classrooms are equipped and schedules arranged, classes could be developed among varying numbers of schools and among different schools for different classes.

Heavy emphasis will be placed on testing the system and training teachers to use it effectively. The first two semesters will be spent testing hardware and software components as well as preparing videotapes, documents, and other appropriate training materials. Extensive time will be spent helping teachers to use the network and to prepare learning experiences which take advantage of the technology and research regarding teaching.

DISCUSSION

Three separate components will be evaluated: The first will plot the changes in student and teacher attitudes toward computer enhanced course delivery. The second will measure achievements of students using this system. The third will compare total costs and per student costs of the system with the costs of the traditional classroom system.

When the Project is in operation, school districts should be able to enrich their academic offerings, share staff in areas of need, and economically maintain local schools as well as local control.

Students in shared classes should obtain achievement levels at least equal or superior to students taught in a traditional manner. Students' attitudes toward these classes should be as positive or more so than the students' attitudes toward traditional classes.

A newsletter updating schools in Nebraska as to the status of the Project will be distributed several times during the Project. Representatives of other school districts outside the state will be invited to visit a Project site to observe the operation. At the end of the project, a description of the Project and the results of the evaluation will be distributed to schools in Nebraska and, upon request, to other schools outside the state.